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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,323	12/04/2001	Masayuki Mishima	Q67519	9759

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EXAMINER

COLON, GERMAN

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/000,323	Applicant(s) MISHIMA, MASAYUKI	
	Examiner German Colón	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 21-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 21-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Amendment, filed on June 17, 2005, has been entered and acknowledged by the Examiner.
2. Addition of claims 24-46 has been entered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 46 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 46 recites the limitation "said substrate" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-11 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama et al. (US 2002/0068192) in view of Onitsuka et al. (US 6,049,167), further in view of Tsai et al. (US 6,566,805).

Regarding claim 1, Moriyama discloses a method of producing a light-emitting device comprising the steps of disposing a transparent electrode **2**, one or more organic layers **3** and a back side electrode **5** on a substrate **1** to provide a light-emitting structure, and disposing sealing parts **6** on said light-emitting structure to isolate said one or more organic layers from external air, wherein said one or more organic layers comprises a light-emitting layer **3** containing a phosphorescent compound (see paragraph [0048]). Moriyama teaches the detrimental effects caused by moisture and oxygen to the OLED (see paragraphs [0019] and [0020]) but is silent regarding their concentrations within the sealed atmosphere and the specific steps of the sealing process.

However, in the same field of endeavor, Onitsuka discloses a method of sealing a light emitting device comprising the steps of disposing a substrate containing a transparent electrode, a light emitting layer and a back side electrode, and sealing parts, in an inert gas atmosphere where the moisture concentration is 100 ppm or less (see at least Figs. 1 and 2 in view of Col. 3, lines 13-18) with the purpose of decreasing the costs of manufacture by reducing and simplifying the number of steps in the production of the organic EL devices, while eliminating the need of providing additional parts such as a filling port for introducing the inert gas to the sealed device (see Col. 2, lines 55-59 and Col. 3, lines 19-20). Further, Onitsuka teaches a moisture concentration below 100 ppm to decrease the degradation of the electrode layers and the light-emitting layer, thereby reducing the number of dark spots in the device (see Col. 1, lines 27-32 in

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view of Col. 6, lines 1-3 and Col. 19, lines 27-29). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to seal the device of Moriyama by the method disclosed by Onitsuka and its specific moisture concentration, in order to decrease the costs of manufacture by reducing and simplifying the number of steps in the production of the organic EL devices, while eliminating the need of providing additional parts such as a filling port for introducing the inert gas to the sealed device; and further, to decrease the degradation of the electrode layers and the light emitting layer, thereby reducing the number of dark spots in the device.

Moriyama-Onitsuka discloses the claimed invention but is silent regarding the preferred concentration of oxygen within the sealed atmosphere. However, in the same field of endeavor, Tsai teaches that in order to avoid the adverse effects of oxygen and moisture in an OLED, which deteriorate the performance and decrease the lifetime of the device (see Col. 2, lines 6-19, and Col. 3, lines 1-7), the required content of both oxygen and water (moisture) should be no more than 1 ppm (see Col. 3, lines 9-10). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the inert gas of Moriyama-Onitsuka with an oxygen content of not more than 1 ppm, to avoid the adverse effects of oxygen which deteriorates the performance and decreases the lifetime of the device.

Regarding claim 2, Moriyama-Onitsuka discloses said one or more organic layers being isolated from external air after disposing said one or more organic layers until said sealing parts are disposed (see paragraph [0071] and [0082] of '192; and Col. 11, lines 1-39 of '167).

Regarding claims 3 and 4, Moriyama-Onitsuka-Tsai discloses both of said moisture concentration and said oxygen concentration being 1 ppm or less (see ¶ 167, Col. 6, lines 1-3; and ¶ 805, Col. 3, lines 9-10).

Referring to claim 5, Moriyama discloses at least one of said organic layers being formed by a wet film-forming method (see paragraph [0047], lines 9-10).

Referring to claim 6, Moriyama discloses said one or more organic layers comprising a hole-injecting layer in contact with said light-emitting layer and said hole-injecting layer over said transparent electrode (see paragraph [0047], lines 3-9).

Referring to claim 7, Moriyama discloses at least both of said hole-injecting layer and said light-emitting layer being formed by a wet film-forming method (see paragraph [0047], lines 6-8 in view of lines 9-10).

Regarding claim 8, Moriyama discloses said one or more organic layers further comprising an electron-transporting layer between said light-emitting layer and said back side electrode (see paragraph [0047], lines 3-9).

Regarding claim 9, Moriyama discloses a weight ratio of said phosphorescent compound in said light-emitting layer being in a range of 0.1 to 70 wt% (see paragraph [0066] lines 4-5).

Regarding claim 10, Moriyama discloses said phosphorescent compound being an ortho-metallation complex (see paragraph [0048], lines 5-8, and paragraph [0066], line 4).

Regarding claim 11, Moriyama discloses an UV-hardening resin being used in combination with said sealing parts to isolate said one or more organic layers from external air (see paragraph [0056] lines 4-5).

Referring to claims 21-22, the claims are rejected over the reasons stated in the rejection of claims 1 and 2.

Referring to claim 23, the claim is rejected over the reasons stated in the rejection of claims 1, 2 and 5.

7. Claims 1-11 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldo et al. (US 6,097,147) in view of Onitsuka et al. (US 6,049,167), further in view of Tsai et al. (US 6,566,805).

Regarding claim 1, Baldo discloses a method of producing a light-emitting device (see Fig. 3) comprising the steps of disposing a transparent electrode **511**, one or more organic layers **512-515** and a back side electrode **516** on a substrate **510** to provide a light-emitting structure, wherein said one or more organic layers comprises a light-emitting layer **513** containing a phosphorescent compound. Baldo is silent regarding the limitation of “disposing sealing parts to isolate said one or more organic layers from external air, wherein said sealing parts are disposed in an inert gas atmosphere where both of a moisture concentration and oxygen concentration are 100 ppm or less”.

However, in the same field of endeavor, Onitsuka discloses a method of sealing a light emitting device comprising the steps of disposing a substrate containing a transparent electrode, a light emitting layer and a back side electrode, and sealing parts, in an inert gas atmosphere where the moisture concentration is 100 ppm or less (see at least Figs. 1 and 2 in view of Col. 3, lines 13-18) with the purpose of decreasing the costs of manufacture by reducing and simplifying the number of steps in the production of the organic EL devices, while eliminating the need of

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providing additional parts such as a filling port for introducing the inert gas to the sealed device (see Col. 2, lines 55-59 and Col. 3, lines 19-20). Further, Onitsuka teaches a moisture concentration below 100 ppm to decrease the degradation of the electrode layers and the light-emitting layer, thereby reducing the number of dark spots in the device (see Col. 1, lines 27-32 in view of Col. 6, lines 1-3 and Col. 19, lines 27-29). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to seal the device of Baldo by the method disclosed by Onitsuka and its specific moisture concentration, in order to decrease the costs of manufacture by reducing and simplifying the number of steps in the production of the organic EL devices, while eliminating the need of providing additional parts such as a filling port for introducing the inert gas to the sealed device; and further, to decrease the degradation of the electrode layers and the light emitting layer, thereby reducing the number of dark spots in the device.

Baldo-Onitsuka discloses the claimed invention but is silent regarding the preferred concentration of oxygen within the sealed atmosphere. However, in the same field of endeavor, Tsai teaches that in order to avoid the adverse effects of oxygen and moisture in an OLED, which deteriorate the performance and decrease the lifetime of the device (see Col. 2, lines 6-19, and Col. 3, lines 1-7), the required content of both oxygen and water (moisture) should be no more than 1 ppm (see Col. 3, lines 9-10). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the inert gas of Baldo-Onitsuka with an oxygen content of not more than 1 ppm, to avoid the adverse effects of oxygen which deteriorates the performance and decreases the lifetime of the device.

Regarding claim 2, Baldo-Onitsuka-Tsai discloses said one or more organic layers being isolated from external air after disposing said one or more organic layers until said sealing parts are disposed (see Col. 11, lines 1-39 of '167).

Regarding claims 3 and 4, Baldo-Onitsuka-Tsai discloses both the moisture concentration and the oxygen concentration being 1 ppm or less.

Regarding claim 5, Baldo discloses the at least one of said organic layers being formed by a wet film-forming method (see Col. 5, lines 49-51).

Regarding claim 6, Baldo discloses said one or more organic layers comprising a hole-injecting layer in contact with said light-emitting layer and said hole-injecting layer over said transparent electrode (see Fig. 3).

Referring to claim 7, Baldo discloses at least both of said hole-injecting layer and said light-emitting layer being formed by a wet film-forming method (see Col. 5, lines 49-51).

Referring to claim 8, Baldo discloses said one or more organic layers further comprising an electron-transporting layer between said light-emitting layer and said back side electrode (see Fig. 3).

Referring to claim 9, Baldo discloses a weight ratio of said phosphorescent compound in said light-emitting layer being in a range of 0.1 to 70 wt% (see Col. 6, line 11).

Referring to claim 10, Baldo discloses said phosphorescent compound being an ortho-metallation complex (see Col. 6, line 11).

Regarding claim 11, Baldo-Onitsuka-Tsai discloses an UV-hardening resin being used in combination with said sealing parts to isolate said one or more organic layers from external air (see '167, at least Col. 3, lines 20-21).

Referring to claims 21-22, the claims are rejected over the reasons stated in the rejection of claims 1 and 2.

Referring to claim 23, the claim is rejected over the reasons stated in the rejection of claims 1, 2 and 5.

8. Claims 24-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriyama et al. (US 2002/0068192) in view of Pai et al. (US 6,612,888).

Regarding claim 24, Moriyama discloses a method of producing a light-emitting device consisting of the steps of:

disposing a transparent electrode **2**, one or more organic layers **3** and a back side electrode **5** on a substrate **1** to provide a light-emitting structure; and

disposing sealing parts **6** on said light-emitting structure to isolate said one or more organic layers from external air, wherein said one or more organic layers comprises a light-emitting layer **3** containing a phosphorescent compound (see paragraph [0048]). Moriyama teaches the detrimental effects caused by moisture and oxygen to the OLED (see paragraphs [0019] and [0020]) but is silent regarding their concentrations within the sealed atmosphere and the specific steps of the sealing process.

However, in the same field of endeavor, Pai discloses a method of sealing a light-emitting device consisting essentially of:

disposing a transparent electrode **602**, one or more organic layers **604**, and a back side electrode **606** on a substrate **600** (or **500**; see Fig. 5A in view of Fig. 6) to provide a light emitting structure;

and disposing sealing parts **504,508** on said light-emitting structure to isolate said one or more organic layers from moisture and oxygen in external air;

wherein said light emitting layer, said back side electrode and said sealing parts are disposed in an inert gas atmosphere **530** where both a moisture concentration and an oxygen concentration are less than 10 ppm (see at least Col. 3, lines 56-61). Pai discloses this method to effectively block external moisture and oxygen, so as to prevent quality deterioration and performance degradation of the electroluminescent device, while providing a high production efficiency and a product yield with reduced fabrication cost (see Col. 2, lines 51-59).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to seal the device of Moriyama by the method disclosed by Pai and its specific moisture and oxygen concentrations, in order to prevent quality deterioration and performance degradation of the electroluminescent device, while providing a high production efficiency and a product yield with reduced fabrication cost.

Regarding claims 25-26, Moriyama-Pai discloses both of the moisture and oxygen concentration being less than 30 ppm (see '888, Col. 3, lines 57-58).

Regarding claim 27, Moriyama discloses at least one of said organic layers being formed by a wet film-forming method (see paragraph [0047], lines 6-8 in view of lines 9-10).

Referring to claim 28, Moriyama discloses the one or more organic layers comprising at least four organic layers (e.g. 5), and exemplifies a HTL, a light emitting layer (LEL), and an ETL (see at least paragraph [0047], lines 3-9). However, it is conventional in the field of OLEDs to include between the hole-injecting electrode and the electron-injecting electrode a HIL, HTL, LEL, ETL and EIL. Thus, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to include a structure comprising transparent-electrode/HIL/HTL/LEL/ETL/EIL/electrode as the light-emitting device disclosed by Moriyama, since it is a well known and conventional structure, and Moriyama teaches the desirability of including said plurality of layers.

Referring to claim 29, Moriyama discloses the one or more organic layers comprising at least four organic layers (e.g. HIL/HTL/LEL/ETL/EIL), wherein said organic layers are formed by a wet film-forming method (see paragraph [0047], lines 6-8 in view of lines 9-10).

Referring to claims 30, 34-37 and 39-44, the claims are rejected over the reasons stated in the rejection of claims 28 and 29.

In regards to claim 31, Moriyama discloses a weight ratio of said phosphorescent compound in said light-emitting layer being in a range of 0.1 to 70 wt% (see paragraph [0066] lines 4-5).

In regards to claims 32 and 45, Moriyama discloses said phosphorescent compound being an ortho-metallation complex (see paragraph [0048], lines 5-8, and paragraph [0066], line 4).

In regards to claim 33, Moriyama discloses an UV-hardening resin being used in combination with said sealing parts to isolate said one or more organic layers from external air (see paragraph [0056] lines 4-5).

In regards to claim 38, Moriyama discloses the substrate being of an inorganic material (see paragraph [0045]).

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9. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morii (US 6,617,052) in view of Pai et al. (US 6,612,888), further in view of Moriyama (US 2002/0068192).

Morii discloses a method for producing a light-emitting device consisting essentially of the steps of:

disposing a transparent electrode **2**, one or more organic layers **3,4** and a back side electrode **5** on a substrate to provide a light emitting structure; and

disposing sealing parts **6,7,8** on said light emitting structure to isolate said one or more organic layers from moisture and oxygen in external air;

wherein a light emitting layer (LEL), said back electrode and said sealing parts are disposed in an inert gas atmosphere where an oxygen concentration is less than 100 ppm (see Col. 5, lines 9-11), wherein said one or more organic layers are isolated from external air after disposing said LEL solely due to said inert gas atmosphere, the method steps consisting essentially of:

forming a transparent electrode on a glass plate as the substrate in a vacuum chamber (see Col. 4, lines 54-62; and Col. 5, line 7);

spin coating an application liquid comprising a HIL/HTL and LEL;

transferring the substrate having coated thereon the transparent electrode into a glove box from the vacuum chamber (see Col. 5, lines 8-10), where the inner atmosphere of the glove box has been replaced with an inert gas having an oxygen concentration is less than 100 ppm, and introducing said application liquid into the glove box;

heating and drying the substrate;

transferring to resultant product into a vapor deposition apparatus connected to the glove box (see Col. 6, lines 1-6);

returning the light-emitting structure to the glove box and interconnecting the transparent electrode and the back side electrode; and

disposing the sealing parts to isolate the one or more organic layers (see Col. 4, line 54 to Col. 6, line 55).

Morii teaches the detrimental effects caused by moisture, but is silent regarding the preferred concentration of moisture within the sealed atmosphere. Morii discloses the inert gas atmosphere being substantially free from water (see Col. 5, lines 9-11).

However, in the same field of endeavor, Pai discloses a method of sealing a light emitting device, the method including an inert gas atmosphere substantially free from oxygen and moisture, and teaches the moisture/water concentration to be less than 100 ppm, in order to effectively block external moisture, so as to prevent quality deterioration and performance degradation of the electroluminescent device (see Col. 2, lines 51-59). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a moisture/water content of less than 100 ppm in the sealing method disclosed by Morii, with the purpose of effectively block external moisture, so as to prevent quality deterioration and performance degradation of the electroluminescent device.

Morii-Pai disclosed the claimed invention except for the limitation of the LEL containing a phosphorescent compound. However, Moriyama discloses an OLED and teaches the advantage of including a LEL containing a phosphorescent compound over a fluorescent compound, since the former increases up to 100% the theoretical limit for internal quantum

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efficiency, improving the light production (see at least paragraphs [0025]-[0026]). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a phosphorescent compound in the device of Morii-Pai, in order to improve light production by increasing up to a 100% the theoretical limit for internal quantum efficiency.

Response to Arguments

10. Applicant's arguments filed 6/17/05 have been fully considered but they are not persuasive.

i. Applicant argues that neither Onitsuka and Tsai teaches the use of phosphorescent compounds, and because this mechanisms for luminance is different from that of a fluorescent compound, there is no motivation to combine with Moriyama (see at least Remarks, page 17, last paragraph and page 20, last paragraph).

The Examiner concedes that the mechanism for luminance is different for a fluorescent compound and for a phosphorescent compound. However, the problem at hand is not the way the light is produced, but whether oxygen and moisture have a detrimental effect on the device. As clearly indicated in the rejection and the cited references, oxygen and moisture have adverse effect over the electroluminescent structure.

Moreover, the detrimental effects of the environment (i.e. oxygen and water) are not limited to the light-emitting layer, but also caused peeling and delaminating of the electrodes and other organic layers.

ii. Applicant argues that none of the references teach or suggest the concentration of water and moisture of the inert gas atmosphere *during the disposing step of a light-emitting layer*

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and back side electrode but they are already made before entering the chambers with the controlled atmosphere (see Page 19, 2nd paragraph and Page 20, lines 1-7).

The Examiner notes that the claim language does not recite that *during the formation* step of the LEL and back electrode, the atmosphere has a controlled oxygen and moisture concentration. While Applicant reads such limitations in the claims, the claims only call for the LEL and back electrode being *disposed* in said controlled atmosphere. No steps of “*forming... during...*” are recited in the claims.

iii. Applicant argues that it is also known positive effect of oxygen on a fluorescent light emitting device.

However, it is clear for the Prior Art of Record that organic EL devices are susceptible to moisture and oxygen, and the life of the device is reduced by the introduction of these elements to the active region. Moreover, the teachings for controlling both moisture and oxygen come from the cited references and their desirability to increase the lifetime of a display.

iv. Applicant argues that Tsai fails to teach or suggest how to design an apparatus/method which controls water and oxygen in the atmosphere during processing of the light emitting device.

First, the Examiner notes that the claims do not call for an apparatus for forming a light emitting device. Second, as stated above, the claim language does not recite that *during the formation* step of the LEL and back electrode, the atmosphere has a controlled oxygen and moisture concentration.

For the reasons stated above, the rejection of the claims is deemed proper.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

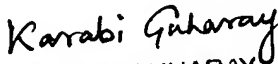
Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


gc


KARABI GUHARAY
PRIMARY EXAMINER